

Docket No. 270122US0PCT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Seiichi KAWATO, et al.

SERIAL NO: New U.S. PCT Application Based on PCT/JP03/13710

GAU:

FILED: Herewith

EXAMINER:

FOR: CATALYST FOR ALPHA, BETA-UNSATURATED CARBOXYLIC ACID PRODUCTION, PROCESS FOR PRODUCING THE SAME, AND PROCESS FOR PRODUCING ALPHA, BETA-UNSATURATED CARBOXYLIC ACID

## INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR 1.97

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

Applicant(s) wish to disclose the following information.

## REFERENCES

- ☒ The applicant(s) wish to make of record the references listed on the attached form PTO-1449. Copies of the listed references are attached, where required, as are either statements of relevancy or any readily available English translations of pertinent portions of any non-English language references.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

## RELATED CASES

- ☐ Attached is a list of applicant's pending application(s), published application(s) or issued patent(s) which may be related to the present application. In accordance with the waiver of 37 CFR 1.98 dated September 21, 2004, copies of the cited pending applications are not provided. Cited published and/or issued patents, if any, are listed on the attached PTO form 1449.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

## CERTIFICATION

- ☐ Each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.
- ☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned, having made reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this statement.

## DEPOSIT ACCOUNT

- ☒ Please charge any additional fees for the papers being filed herewith and for which no check or credit card payment is enclosed herewith, or credit any overpayment to deposit account number 15-0030. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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Form PTO 1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY DOCKET NO. 270122US0PCT		SERIAL NO. New U.S. PCT Application Based on PCT/JP03/13710	
LIST OF REFERENCES CITED BY APPLICANT				APPLICANT Seiichi KAWATO, et al.			
				FILING DATE Herewith		GROUP	
<b>U.S. PATENT DOCUMENTS</b>							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	AA	3,970,713	07/20/76	SCHARFE, Gerhard et al.			
	AB	3,275,680	09/27/66	HOLZRICHTER, Hermann			
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						
	AL						
	AM						
	AN						
<b>FOREIGN PATENT DOCUMENTS</b>							
		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION YES                  NO		
	AO	56-59722	05/23/81	JP(with English abstract)			NO
	AP	08-299803	11/19/96	JP(with English abstract)			NO
	AQ	2001-172222	06/26/01	JP(with English abstract)			NO
	AR	60-155148	08/15/85	JP			NO
	AS	60-139341	07/24/85	JP			NO
	AT	60-139643	07/24/85	JP(with English abstract)			NO
	AU	02/083299	10/24/02	WO			NO
<b>OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)</b>							
	AV	S. B. ZIEMECKI: "Formation of Interstitial Pd-C Phase by Interaction of Ethylene Acetylene, and Carbon Monoxide with Palladium" J. Am. Chem. Soc., Vol. 107, page 4547-4548, 1985.					
	AW	Kenji OKITSU: "Synthesis of Palladium Nanoparticles with Interstitial Carbon by Sonochemical Reduction of Tetrachloropalladate(II) in Aqueous Solution" J. Phys. Chem. B, Vol.101, page 5470-5472, 1997.					
	AX	Tetsuro SEIYAMA: Industrial Chemical Journal, Vol. 74, No. 4, page 134-139, 1971.					
	AY	James E. LYONS: "Selective Oxidation of Hydrocarbons via C-H Bond Activation by Soluble and Supported Palladium Catalysts" Catalysis Today, Vol. 3, pages 245-258, 1988.					
	AZ					<input type="checkbox"/> Additional References sheet(s) attached	
Examiner					Date Considered		
*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.							

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Docket No.: 270122US0PCT

### STATEMENT OF RELEVANCY

1) References AO & AP have been cited in the International Search Report. Copies of these references are being submitted herewith only when not automatically provided by the International Searching Authority.

2) References \_\_\_\_\_ have been cited in the corresponding \_\_\_\_\_ Search Report. A copy of these references is being submitted herewith.

3) References AQ-AS are discussed in the specification. A copy of these references is being submitted here with.

4) References AA, AB, AT-AY are additional prior art known to Applicant. A copy of these references is being submitted herewith.

AR & AS      JP 60-155148 & JP 60-139341      A method is described in which an olefin or  $\alpha$ ,  $\beta$ -unsaturated aldehyde is oxidized with molecular oxygen in a liquid phase under the presence of a palladium catalyst including the palladium metal to prepare an  $\alpha$ ,  $\beta$ -unsaturated carboxylic acid and the palladium catalyst can be prepared by reduction of a palladium compound with an olefin having 3 to 6 carbon atoms.

AT              JP 60-139643      A method is described in which an olefin or  $\alpha$ ,  $\beta$ -unsaturated aldehyde is oxidized with molecular oxygen in a liquid phase under the presence of a palladium catalyst including the palladium metal to prepare an  $\alpha$ ,  $\beta$ -unsaturated carboxylic acid and the palladium catalyst can be prepared by reduction of a palladium compound with an olefin having 3 to 6 carbon atoms.

AX              Industrial Chemical Journal, Vol. 74, No. 4, p. 134-139, 1971.  
A method is described in which a palladium black catalyst prepared from an aqueous palladium chloride solution is used to perform a liquid-phase oxidation reaction of propylene in water.